

# 6MQ8

## Medium-Mu Triode— Sharp-Cutoff Pentode

9-Pin Miniature Type

For Use as a General-Purpose-Amplifier  
Tube in Color- and Black-and-White TV Receivers

### ELECTRICAL CHARACTERISTICS – Bogey Values<sup>a</sup>

Heater Voltage, ac or dc	$E_h$	$6.3 \pm 10\%$	V
Heater Current . . . . .	$I_h$	535	mA

Direct Interelectrode Capacitances:<sup>b</sup> (Without External Shield)

Triode Unit:

Grid to plate . . . . .	$c_{g-p}$	1.7	pF
Input: $G_T$ to ( $K_T$ , $G_{3P}$ + $K_P$ + IS, H) . . . .	$c_i$	3.0	pF
Output: $P_T$ to ( $K_T$ , $G_{3P}$ + $K_P$ + IS, H).	$c_o$	1.4	pF

Pentode Unit:

Grid No.1 to plate . .	$c_{g1-p}$	0.045	pF
Input: $G_{1P}$ to ( $K_P$ + $G_{3P}$ + IS, $G_{2P}$ , H) .	$c_i$	7.5	pF
Output: $P_P$ to ( $K_P$ + $G_{3P}$ + IS, $G_{2P}$ , H).	$c_o$	2.2	pF

For the following characteristics, see Conditions below:

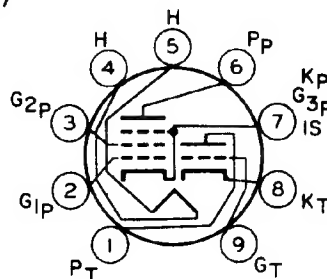
		Triode Unit	Pentode Unit	
Amplification Factor . .	$\mu$	40	-	
Plate Resistance (Approx.)	$r_p$	5	150	$k\Omega$
Transconductance . . . .	$g_m$	8500	10000	$\mu mho$
DC Plate Current . . . .	$I_b$	18	12	mA
DC Grid-No.2 Current. .	$I_{c2}$	-	4.5	mA
Cutoff DC Grid-No.1				
Voltage for $I_b = 20 \mu A$ .	$E_{c1(co)}$	-12	-7	V

Conditions:

Heater Voltage . . . . .	$E_h$	6.3	6.3	V
DC Plate Voltage . . .	$E_b$	150	125	V
DC Grid-No.2 Voltage.	$E_{c2}$	-	125	V
Cathode Resistance. .	$R_k$	56	62	$\Omega$

### TERMINAL DIAGRAM (Bottom View)

- Pin 1 - Triode Plate
- Pin 2 - Pentode Grid No.1
- Pin 3 - Pentode Grid No.2
- Pin 4 - Heater
- Pin 5 - Heater
- Pin 6 - Pentode Plate
- Pin 7 - Pentode Cathode, Grid No.3 and Internal Shield
- Pin 8 - Triode Cathode
- Pin 9 - Triode Grid



JEDEC 9AE

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## MECHANICAL CHARACTERISTICS

Maximum Overall Length . . . . .	2.187 in (55.54 mm)
Maximum Seated Length . . . . .	1.937 in (49.19 mm)
Maximum Diameter . . . . .	0.875 in (22.12 mm)
Envelope . . . . .	JEDEC T6-1/2
Base . . . . .	Small-Button Noval 9-Pin (JEDEC E9-1)
Dimensional Outline . . . . .	JEDEC 6-2
Terminal Diagram . . . . .	JEDEC 9AE
Type of Cathodes . . . . .	Coated Unipotential
Operating Position . . . . .	Any

## MAXIMUM RATINGS - Design-Maximum Values<sup>c</sup>

		Triode Unit	Pentode Unit	
DC Plate Voltage . . . . .	$E_b$	330	330	V
DC Grid-No.2 Supply Voltage . . . . .	$E_{c2}$	-	330	V
DC Grid-No.2 Voltage . . . . .	See <i>Grid-No.2 Input Rating Chart</i> at front of Receiving Tube Section.			
DC Grid-No.1 Voltage:				
Positive-bias value . . . . .	$E_{c1}$	0	0	V
Heater-Cathode Voltage:				
Peak . . . . .	$e_{hkm}$	±200	±200	V
DC . . . . .	$E_{hk}$	100	100	V
Heater Current . . . . .	$I_h$	500 to	570	mA
Grid-No.2 Input: For grid-No.2 voltages up to 165 volts . . . . .	$P_{g2}$	-	0.55	W
For grid-No.2 voltages between 165 and 330 volts . . . . .	See <i>Grid-No.2 Input Rating Chart</i> at front of Receiving Tube Section.			
Plate Dissipation . . . . .	$P_b$	2.7	2.5	W

## MAXIMUM CIRCUIT VALUES

### Grid-No.1 Circuit Resistance:

For fixed-bias operation	$R_{g1(ckt)}$	0.5	0.25	$M\Omega$
For cathode-bias operation	$R_{g1(ckt)}$	0.5	0.5	$M\Omega$

## INTERELECTRODE LEAKAGE

Minimum Leakage Resistance between grid No.1 of each unit and all other electrodes of both units tied together

$R_{g1-all}$	100	$M\Omega$
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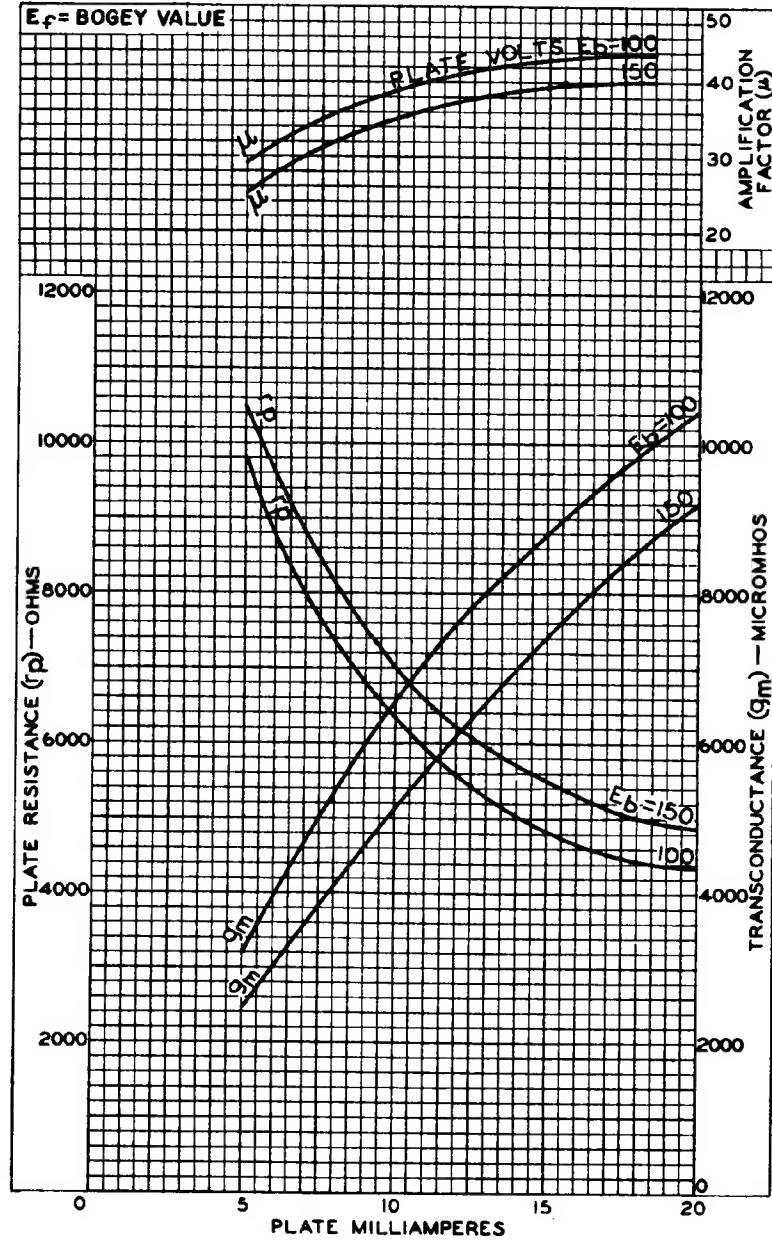
### Conditions:

$E_h$  = bogey value,  $E_{c1}$  = -100 V with respect to all other electrodes tied together.

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- <sup>a</sup> Unless otherwise specified.
- <sup>b</sup> Measured in accordance with the current issue of EIA Standard RS-191.
- <sup>c</sup> As defined in the current issue of EIA Standard RS-239.

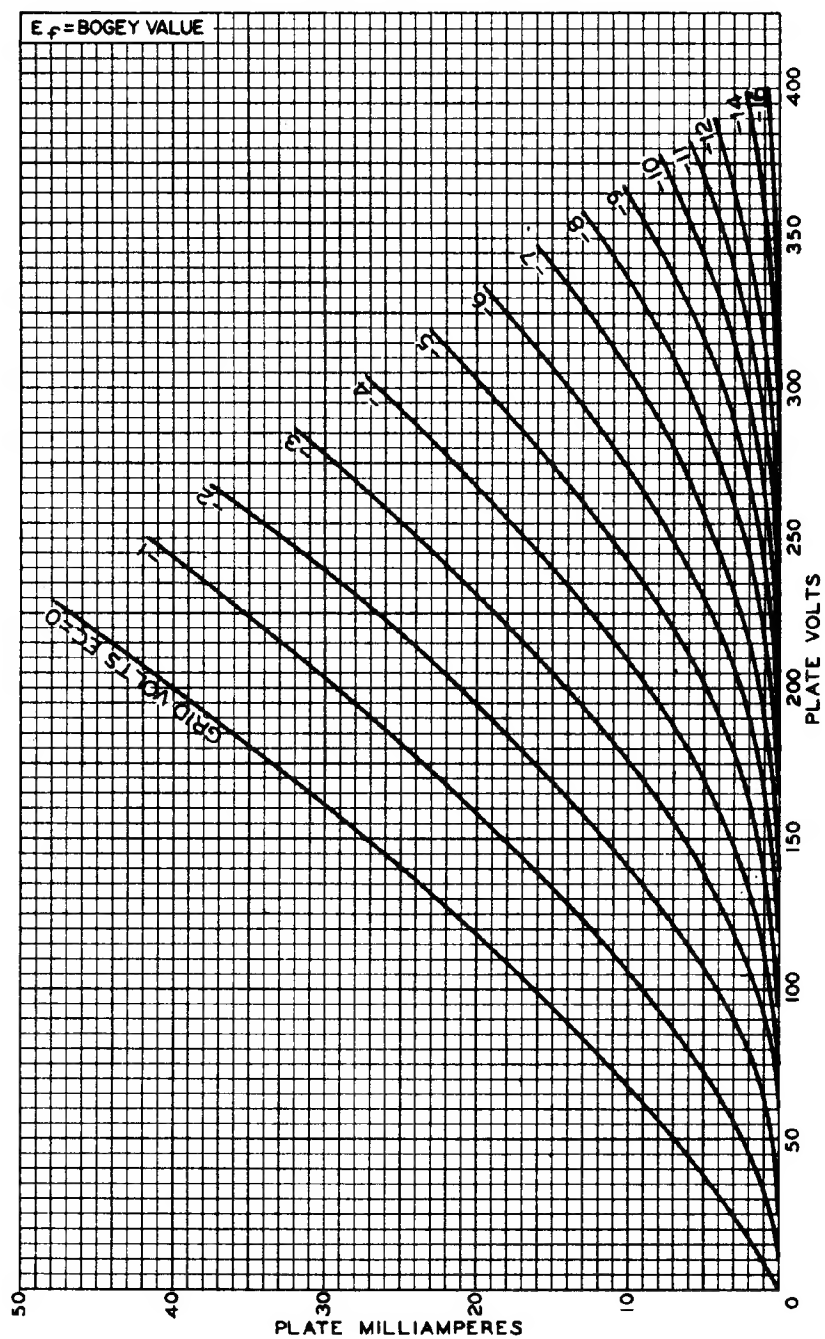
## TYPICAL CHARACTERISTICS – Triode Unit



92CM-9882RI

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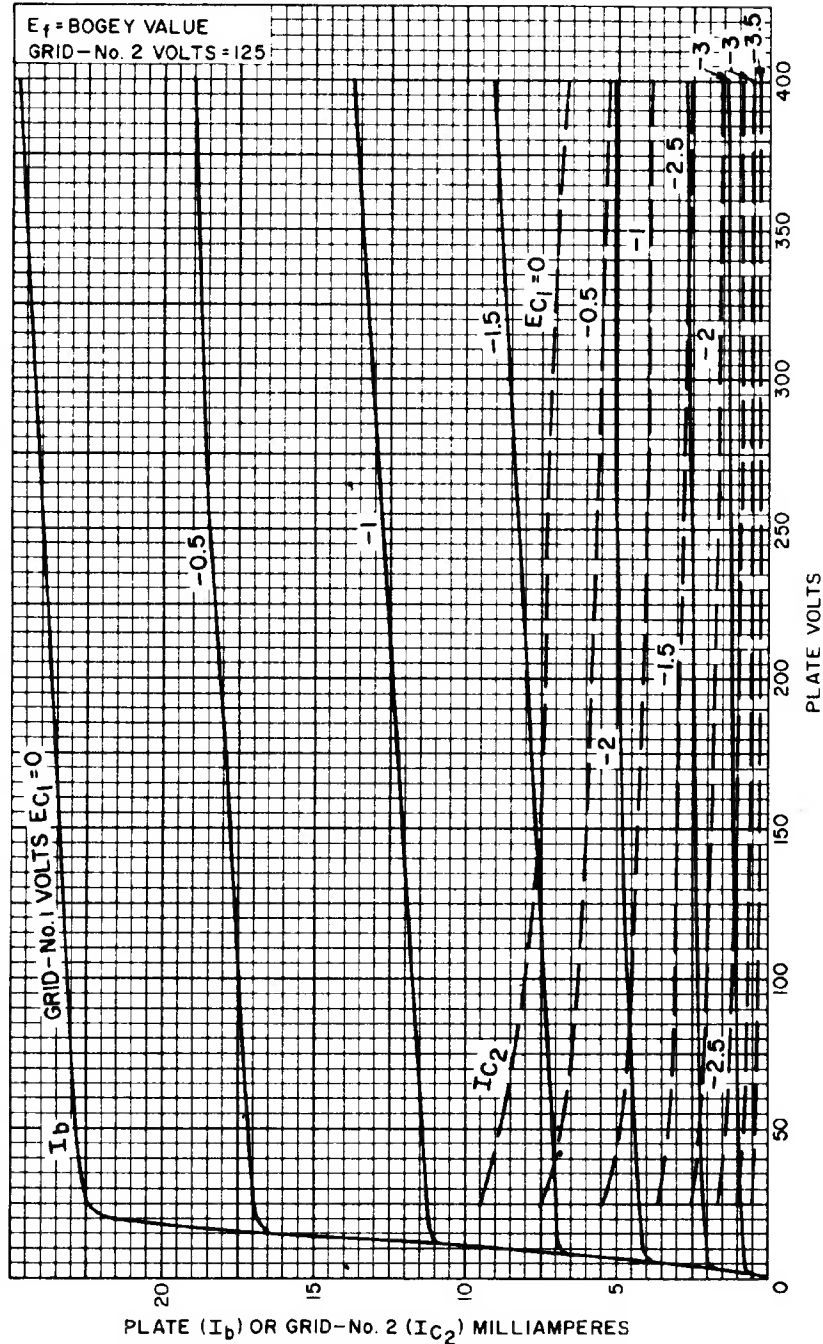
## TYPICAL CHARACTERISTICS - Triode Unit



92CM-9866RI

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TYPICAL CHARACTERISTICS – Pentode Unit



92CM-15102

**RCA** Electronic Components

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## TYPICAL CHARACTERISTICS – Pentode Unit

